

City of Newport Beach

Water Quality/Coastal Tidelands Committee Minutes

Date: February 13, 2014

Time: 3:00 p.m.

Location: Newport Coast Conference Room, 2nd Floor, Bay E

1. Welcome/Self Introductions

Committee Members present:

Chairwoman/Council Member Nancy Gardner

Dennis Baker

Carl Cassidy

Louis Denger

Fred Galluccio

Mike Henn/Council Member

George Robertson

Guests present:

Jim Mosher, resident

Monica Mazur, resident

Jeff Coffman, Clean Green Technology

Karen McLaughlin, SCCWRP (Southern California Coastal Waters Research Program)

Staff present:

John Kappeler, Water Quality Manager

Shane Burckle, Water Conservation Coordinator

Shari Rooks, Public Works Specialist

Bob Stein, Assistant City Engineer

Dave Kiff, City Manager

The agenda for the Water Quality/Coastal Tidelands Committee was posted at 7:50 am on February 6, 2014, in the binder located in the entrance of the Council Chambers at 100 Civic Center Drive.

2. Approval of Previous Meeting's Minutes

The January 9, 2014 meeting minutes were approved with a minor typo correction on page 2, Item 4a under New Business changing MSF to MS4.

3. Old Business

a. Bay and Ocean Bacteriological Test Results

Monica Mazur reviewed recent water quality test results within Newport Bay and along the ocean shoreline.

- John Kappeler noted that a storage facility at 16th and Newport Boulevard blew a lateral and approximately 50,000 gallons of potable water were released into the storm drain system. The hits on January 27th were more than likely attributable to that incident.

b. Committee Goals and Priority Update

John Kappeler gave a progress update on the Committee's 2013 goals.

- Costs for street sweeping are approximately \$16 per mile.
- There are sections in the Municipal Code that would require residents to sweep private streets if the Committee chose to make that recommendation to Council.

- **Dennis Baker** asked if the fees collected for parking violations went into the General Fund.
- **Louis Denger** asked how many miles of private streets there were in the City and was told that approximately 30% of the 400 miles of streets in the City were private.
- **Mike Henn** suggested starting with workshops with the 100 plus Homeowner Associations (HOAs)
- **Dennis Baker** asked how the HOAs would be monitored if the City opted to require them to sweep their streets and clean their catch basins. **John Kappeler** replied that the City would ask them how many miles were being swept annually and to provide a catch basin cleaning schedule so we could include that data in our annual Water Quality Report.
- **Mike Henn** thought it would be beneficial if the HOAs could “piggy-back” onto our contractor and suggested hosting several workshops, inviting the HOAs to attend so we could explain the benefits of street sweeping, catch basin cleaning and how the City could help them.
- **Dennis Baker** asked if there is a maintenance plan for existing and new trash booms and the answer was yes, the booms were funded with Orange County Transportation Authority (OCTA) grant money and there was a 10-year maintenance plan included. The boom at the Newport Aquatic Center (NAC) was replaced 2 years ago at a cost of approximately \$20K and is currently in need of repair.

ACTION: **John Kappeler** will send Committee members a copy of a recent article on Buck Gully that appeared in Storm Water Magazine.

ACTION: **John Kappeler** will look into the repair of the trash boom at the NAC.

ACTION: Add topic of Natural Source Exclusion for further discussion to the March agenda.

4. New Business

- a. **Karen McLaughlin**, from the **Southern California Coastal Waters Research Program (SCCWRP)** gave the Committee an update and presentation on **Ocean Acidification** (See attached PowerPoint).
 - Ocean Acidification was described as follows: Ocean pH decreases when CO₂ dissolves in seawater and reacts with water to form bicarbonate ion and hydrogen ion. Most of the hydrogen ions join with carbonate ions to form bicarbonate ions. These changes in carbonate chemistry of the ocean affects shell forming organisms.
 - The only way to change the course of ocean acidification is to eliminate excess atmospheric CO₂ although local actions could potentially delay the problem in some regions and potentially allow time for ecosystems to adapt. Some species can and have adapted and others have and will suffer.
 - Several Federal actions from 2007 - 2010 has given the Environmental Protection Agency authority to regulate greenhouse gasses under the Clean Air Act and Clean Water Act.
 - Kelp beds are thought to be an acidification refugium because it is believed they absorb large amounts of CO₂ out of the water and as a bio mass. This helps to

stabilize the pH and the calcium carbonate in those regions and helps the shell forming organisms living there.

- At current CO₂ levels, 60% of the coral reefs are in waters with suboptimal saturations and the percentage could increase to 90% over the next 50 years.
 - Although efforts are being undertaken at local levels to address the issue, ocean acidification will continue until global CO₂ emissions are eliminated.
- b. **John Kappeler** gave the Committee an update and presentation on the **Orange County Transportation Authority's (OCTA's) Environmental Allocation Cleanup Grant Program**. (See attached PowerPoint).
- This year's Grant Call at the end of March will be releasing \$2.8M in grant funds available for Tier 1 Projects, \$200K per grant application and \$500K per agency with 20-25% matching funds. OCTA has expanded their allowable projects to include turf removal and irrigation retrofits mainly for street medians.
 - In the past the City has used grant funds to install CDS units, trash skimmers, catch basin screens and filters.
 - There are currently over 800,000 square feet of medians in the City that would likely qualify for grant funds for retrofit projects. If that were something the Committee supported and thought the Council would also support.
 - John also noted that last year the City applied for \$2.3M in OCTA Tier 2 grant funds for a selenium wetlands bioreactor in Big Canyon and we should know within weeks.

ACTION: Committee to take photos of possible medians for the purpose of preparing a list of top locations for the grant application.

5. Public Comments on Non-Agenda Items

- **Jim Mosher** noted a typo that needed to be corrected to the January 9, 2014 meeting minutes.
- **Bob Stein** advised the Committee that Vector Control is unable to treat the surface of the Big Canyon freshwater lake for mosquito larvae due to the overgrowth of bull rush and reeds since maintenance stopped in the mid 90's. They approached the State Fish and Wildlife Department for help. Fish and Wildlife said they have no money and it wasn't their problem. In the last few weeks it seems as if many of the resource agencies are coordinating and agreeing that Vector Control has the right to move in and take the steps they need to do. Vector Control solicited bids and they all came extremely high. **Pat Thomas**, Deputy Public Works Director/City Engineer and Bob Stein are meeting with the contractor on February 14th to work out a "Plan B" that would possibly create a pathway for Vector Control to access the lake. Bob also stated that the Regional Board recently notified State Fish and Wildlife that they are to be named as a party responsible for fixing the selenium in Big Canyon.
- **Dennis Baker** noted that the City's Code Enforcement Division is not a drop down option on the **MyNB App**.
- **Jim Mosher** noted that there are no public restrooms at the Wedge and he felt this should be a concern of the Committee. He questioned City signs posted on harbor facing beaches on the Peninsula that state "no food was allowed." He also suggested the public should be made aware of the penalties the City would incur if our TMDLs (Total Maximum Daily Loads) are not met.

6. Topics for Future Agendas

- (a) Bacteriological Dry-Weather Runoff Gutter Study (Phase III)
- (b) Prop 84 ASBS Grant Program
- (c) Big Canyon Project
- (d) Rhine Channel Project Wrap Up
- (e) Senate Bill – SB 1447
- (f) Marine Protected Areas (MPAs)
- (g) Eelgrass Program
- (h) Trash Project for Storm Drains
- (i) Harbor Commission Copper Report
- (j) Orange County Coastal Regional Sediment Management Plan
- (k) Fracking Free City
- (l) Adopting a Natural Source Exclusion

Set Next Meeting Date

The next meeting date was set for March 13, 2014, at 3 PM in the **Newport Coast Conference Room, Bay E, 2nd Floor.**

7. Adjournment

The meeting was adjourned at 4:30 pm.


Chairwoman / Nancy Gardner

Health Care Agency / Environmental Health Newport Bay Bacteriological Monitoring Program
Total Coliform (TC), Fecal Coliform, Enterococcus (ENT) Colony Forming Units / 100 ml Sample

STATION	Location Description	10/15/13	10/21/13	10/30/13	11/4/13	11/12/13	11/18/13	11/25/13	12/2/13	12/9/13	12/16/13	12/23/13	12/30/13	1/6/14	1/13/14	1/21/14	1/27/14	2/3/14	2/10/14	
NEWPORT BAY (Lower Bay)																				
BNB09	43rd Street Beach	TC FC ENT	>230 10 10	70 <10 <2	50 <10 6	10 <10 10	20 <10 4	<10 <10 10	140 <10 <2	20 <10 10	200 <10 20	20 <10 4	40 <10 2	50 <10 6	20 <10 2	370 <10 6	20 <10 2	10 <10 6	140 26 10	20 <10 10
BNB10	38th Street Beach	TC FC ENT	80 30 36	10 <10 2	>1850 250 76	50 <10 20	10 <10 2	20 <10 20	60 <10 2	60 <10 48	140 <10 20	20 <10 10	<10 <10 2	>390 <10 246	<10 2 8	50 2 2	10 4 2	110 330 180	>8600 <10 4	10 300 56
BNB11	33rd Street Channel	TC FC ENT	60 <10 2	<10 10 10	70 <10 <2	20 <10 600	>5600 <10 <2	60 <2	>130 68	>370 24	70 44	330 2	130 2	<10 2	2000 4	<10 4	170 10	>840 2	>1420 56	
BNB32	Lido Yacht Club Beach	TC FC ENT	>80 <10 2	>10 100 <10	20 4 2	10 2 <2	10 <2 600	10 <2 <2	70 68	>1500 24	<10 4	<10 2	<10 4	<10 2	<10 4	<10 2	<10 4	<10 2	<10 240	
BNB07	Via Genoa Beach	TC FC ENT	160 <10 <2	<10 10 2	20 30 4	20 10 4	>380 <10 2	<10 <2	60 8	>630 2	10 4	30 4	220 >56	20 10	<10 2	<10 4	<10 2	<10 2	300 <10	
BNB35	Newport Blvd. Bridge	TC FC ENT	>430 50 48	60 <10 2	>650 <10 >32	>940 10 2	20 <2	6000 8	>330 78	>940 38	>720 140	10 10	>8000 2000	2800 2	>560 228	>1530 4	>40000 8400	>1000 24	>6800 250	
BNB12	Rhine Channel	TC FC ENT	60 <10 <2	10 <10 2	20 <10 4	560 <10 8	10 2 <2	120 <2	<10 <2	>1480 2	10 4	400 4	70 2	<10 2	<10 4	>530 26	<10 4	<10 2	<10 2	
BNB14	19th Street Beach	TC FC ENT	70 <10 <2	40 <10 2	<10 10 2	100 30 52	>130 <10 20	<10 <2	120 10	30 86	>1910 2	<10 <2	10 2	<10 2	<10 2	<10 2	<10 2	<10 2	<10 2	
BNB15	15th Street Beach	TC FC ENT	95 <10 <2	<10 10 2	80 <10 2	30 2 2	60 <2	150 2	95 4	>140 10	20 2	10 10	>100 10	30 2	120 10	<10 2	>940 4	40 2	>40 2	
BNB17	10th Street Beach	TC FC ENT	120 <10 2	<10 10 2	30 30 2	40 <10 70	>380 <10 2	<10 <2	190 2	60 2	>8000 24	80 2	10 2	10 2	95 2	10 2	30 2	80 2	<10 2	
BNB18	Alvarado/ Bay Isle Beach	TC FC ENT	<10 10 4	10 <10 4	20 <10 4	50 <10 4	<10 2	80 2	50 4	>1210 4	10 2	30 2	2200 2	40 4	10 6	<10 2	<10 2	<10 2	<10 2	
BNB22	N Street Beach	TC FC ENT	<10 <10 2	20 <10 2	10 <10 2	<10 <10 2	<10 2	10 2	30 2	>220 2	10 2	10 6	>150 130	10 2	20 2	<10 2	<10 2	<10 2	<10 2	
BNB31	Garnet Avenue Beach	TC FC ENT	>390 20 66	<200 10 8	>40 10 4	70 30 20	>20 <10 2	120 100 4	170 100 10	>1480 50 50	10 2	20 2	60 279	<10 8	10 2	20 2	30 2	>440 10	40	
BNB03	Ruby Avenue Beach	TC FC ENT	190 10 <2	20 <10 2	100 20 2	80 20 2	30 2	50 2	50 >52	4800 2	>480 2	<10 2	100 2	330 2	<10 6	10 2	20 2	130 2	>310 26	
BNB20	Sapphire Avenue Beach	TC FC ENT	20 <10 10	20 80 4	360 <10 24	10 30 32	>300 <10 2	10 4	180 10	40 6	360 2	10 2	50 2	40 2	40 2	<10 2	<10 2	30 2	<10 2	
BNB34	Grand Canal	TC FC ENT	60 <10 6	40 20 4	>360 <10 2	20 10 8	40 2 2	60 2	210 10	>80 4	50 4	100 4	80 2	360 2	10 4	20 2	50 6	120 2	290	
BNB21	Abalone Avenue Beach	TC FC ENT	120 40 2	<10 10 2	>490 80 4	20 30 10	>140 20 4	110 20 20	10 10 34	>770 4 4	20 2 4	60 2 2	<10 6	<10 2	10 2	40 2	20 4	170 2	10	
BNB01	Park Avenue Beach	TC FC ENT	110 <10 4	80 10 10	>320 <10 2	20 10 2	30 2	<10 6	60 2	70 10	>4800 10	10 2	20 6	50 2	<10 2	50 2	10 2	40 8	<10 2	
BNB02	Onyx Avenue Beach	TC FC ENT	160 10 2	10 <10 2	220 <10 8	300 10 6	10 10 2	60 10 2	80 50 40	>610 20 2	20 2	80 50 2	150 150	30 4	30 2	30 2	20 2	>240 52	<10 10	
BNB29	Promontory Point Channel	TC FC ENT	10 2	<10 2	10 2	50 2	<10 2	<10 2	10 4	<10 2	<10 4	<10 4	<10 4	<10 4	<10 4	<10 4	5800 2	<10 2	60	
BNB33	Bayside Drive Beach	TC FC ENT	>360 10 66	95 <10 4	>40 <10 60	>95 <10 68	>95 <10 8	40 6 10	40 6 8	>4800 10 10	10 2	20 6	160 10	40 10	50 6	40 10	60 36	30 4	110 10	
BNB23	Rocky Point Beach	TC FC ENT	70 20 8	>20 <10 20	<10 <10 8	30 10 2	>10 10 2	60 6 2	>10 2	>60 2	70 10 2	20 2	80 10	<10 2	<10 2	<10 4	<10 2	<10 2	<10 70	

Health Care Agency / Environmental Health New Bay Bacteriological Monitoring Program
Total Coliform (TC), Fecal Coliform (FC), Enterococcus (ENT) Colony Forming Units / 100 ml Sample

Total Coliform (TC), Fecal Coliform (FC), Enterococcus

(ENT) Colony Forming Units / 100 ml Sample

Orange County
Comparative Street Sweeping Analysis

Jurisdiction	Service Provider	Contractor Name	Water Usage	Street Sweeping Annual Expense	Curb Mile Rate	Sweeping Frequency	Billing Frequency	Curb Miles	Funding Source	Contact	Comments
City of Orange	X	Sunset Property Services	X \$	326,912.16 \$	34.62	Bi-Weekly	Bi-Weekly	N/A	General	RDF	John Dean (714) 355-0241 john.dean@ocpw.octo.com
City of Aliso Viejo	X	R.F. Dickson	X \$	73,000.00 \$	16.94	Weekly	Bi-Weekly	Monthly	General	GF	Shaun Peltier (949) 425-2533 speltier@cityofalisioviejo.com
City of Anaheim	X		X \$	1,700,000.00 \$	N/A	Weekly	Bi-Weekly	Monthly	General	SF	Randi Buckley (714) 765-6823 rbulley@cityofanaheim.net
City of Buena Park	X		X \$	152,905.00 \$	10.01	Weekly	Bi-Weekly	Bi-Monthly	General	GF	Jerry Mettas (714) 350-6269 jmettas@cityofbuenapark.net
City of Costa Mesa	X	Clean Streets	X \$	519,000.00 \$	12.00	Weekly	Weekly	Monthly	General	RF	Rick Anderson (310) 748-1601 rickanderson@costamestac.gov
City of Cypress	X		X \$	566,907.00 \$	12.00	Weekly	Bi-Weekly	Monthly	General	GF	Bruce Lindemann (714) 327-7470 bruce.lindemann@costamestac.gov
City of Dana Point	X	Clean Streets	X \$	143,200.00 \$	28.08	Weekly	Weekly	Monthly	General	GF	Art Erbes (714) 306-5978 art.erbes@cityofdanapoint.ca.us
City of Fountain Valley	X	Rainbow Disposal	X \$	249,630.00 \$	25.78	Weekly	Bi-Weekly	Weekly	General	GF	Jennifer Anderson (949) 248-3571 janderson@fountainvalley.ca.us
City of Fullerton	X		X \$	255,620.00 \$	22.99	Weekly	Weekly	Monthly	General	SF	Gill Lopez (714) 593-4512 millopez@cityoffullerton.ca.us
City of Garden Grove	X		X \$	850,350.00 \$	23.49	Weekly	Weekly	Bi-Monthly	General	SF	Tim Campbell (714) 735-5337 tcampbell@cityofgarden-grove.ca.us
City of Huntington Beach	X	Clean Streets	X \$	600,000.00 \$	33.80	Bi-Weekly	Bi-Weekly	Monthly	General	GF	Mark Ladney (714) 745-5382 mark.ladney@cityofhuntingtonbeach.ca.us
City of Irvine	X		X \$	750,000.00 \$	26.28	Bi-Weekly	Bi-Weekly	Monthly	General	GF	Brent Mith (714) 275-5046 brent.mith@cityofirvine.ca.us
City of La Habra	X	Clean Streets	X \$	324,000.00 \$	24.00	Bi-Weekly	Bi-Weekly	Monthly	General	GF	Ralph Vargas (949) 724-7616 ralph.vargas@cityoflahabra.ca.us
City of La Palma	X	Nationwide	X \$	276,255.00 \$	17.65	Weekly	Weekly	Monthly	General	GF	Jeff Henderson (562) 905-5792 jeff.henderson@cityoflapalma.ca.us
City of Laguna Beach	X		X \$	N/A	N/A	Weekly	Weekly	HAULER	General	RF	Che C. (714) 591-3337 che.c@cityoflagunabeach.ca.us
City of Laguna Hills	X		X \$	165,266.00 \$	23.25	Weekly	Daily	Monthly	General	RF	Ken Fisher (949) 459-70334 kfisher@cityoflagunahills.ca.us
City of Laguna Niguel	X		X \$	120,000.00 \$	17.99	Bi-Weekly	Bi-Weekly	Monthly	General	GF	Vince Caronza (949) 707-2460 vcaronza@cityoflagunaniguel.ca.us
City of Laguna Woods	X	County of Orange	X \$	189,000.00 \$	19.01	Bi-Weekly	Bi-Weekly	Monthly	General	GF	Dave Rogers (949) 561-4371 dave.rogers@cityoflagunawoods.ca.us
City of Lake Forest	X	Athens Services	X \$	27,000.00 \$	N/A	Weekly	Weekly	Monthly	General	MM, GT	Doyle Reilly (949) 639-0551 doyle.reilly@cityoflakeforestca.org
City of Los Alamitos	X	R.F. Dickson	X \$	219,000.00 \$	15.77	Weekly	Weekly	Monthly	General	GF	Angel Fuentes (949) 461-3490 angel.fuentes@cityoflosalamitos.ca.org
City of Mission Viejo	X		X \$	N/A	N/A	Weekly	Weekly	Bi-Monthly	General	RF	Tony Brandberry (562) 431-3538 x 105 tony.brandberry@cityofmissionviejo.ca.org
City of Newport Beach	X	Athens Services	X \$	432,558.00 \$	15.52	Bi-Weekly	Weekly	Monthly	General	GF	Bruce Texler (949) 470-3054 bruce.texler@cityofnewportbeach.ca.gov
City of Orange	X	Athens Services	X \$	150,000.00 \$	16.00	Weekly	Weekly	Monthly	General	GF	Tom Miller (949) 718-2481 tom.miller@cityoforange.ca.gov
City of Placentia	X		X \$	850,000.00 \$	N/A	Weekly	Weekly	Bi-Monthly	General	W/B	Michael Wolfe (714) 532-6487 michael.wolfe@cityofplacentia.ca.gov
City of Rancho Santa Margarita	X	Sunset Property Services	X \$	165,530.00 \$	22.75	Bi-Monthly	Bi-Monthly	Monthly	General	GT, SF	Michael McConaha (714) 593-3120 miconaha@cityofrsm.ca.us
City of San Clemente	X	Canon Pacific	X \$	376,805.00 \$	16.48	Weekly	Weekly	Monthly	General	GF	Carole Langford (949) 461-3490 carole.langford@cityofsanclemente.ca.us
City of San Juan Capistrano	X	Canon Pacific	X \$	579,700.00 \$	18.59	Bi-Monthly	Weekly	Monthly	General	CO	Jim Waters (949) 361-5317 jim.waters@cityofsancjcap.ca.us
City of Santa Ana	X	Athens Services	X \$	142,595.00 \$	17.30	Bi-Monthly	Weekly	Bi-Monthly	General	GF	Jill Thomas (949) 443-6352 jill.thomas@cityofsantaana.ca.us
City of Seal Beach	X	R.F. Dickson	X \$	810,000.00 \$	15.00	Weekly	Weekly	Monthly	General	SF	Pedro Guillen (714) 647-7303 pedro.guillen@cityofsealbeach.ca.us
City of Stanton	X	Nationwide	X \$	49,629.00 \$	14.75	Bi-Monthly	Bi-Monthly	Monthly	General	GT	Ernest Arellano (714) 431-2527 x 318 ernest.arellano@cityofstanton.ca.us
City of Tustin	X		X \$	157,272.00 \$	N/A	Weekly	Weekly	Monthly	General	GF	Quang Le (714) 899-0204 quang.le@cityoftustin.ca.us
City of Villa Park	X	Athens Services	X \$	33,056.00 \$	15.19	Bi-Weekly	Bi-Weekly	HAULER	General	GF	Jason Churchill (714) 573-3355 jchurchill@cityofvillapark.ca.us
City of Westminster	X		X \$	N/A	9.61	Bi-Weekly	Bi-Weekly	Monthly	General	GF	Brian Snoot (714) 998-1500 brian.snoot@westminster.ca.us
City of Yorba Linda	X	R.F. Dickson	X \$	350,000.00 \$	24.75	Bi-Monthly	Bi-Monthly	Monthly	General	GF	Pete Quinn (714) 548-1651 pete.quinn@cityofyorbalinda.ca.us
			X \$	210,000.00 \$	15.82	Bi-Weekly	Bi-Weekly	Monthly	General	GF	Armando Jaime (714) 961-7170 armando.jaime@cityofyorbalinda.ca.us

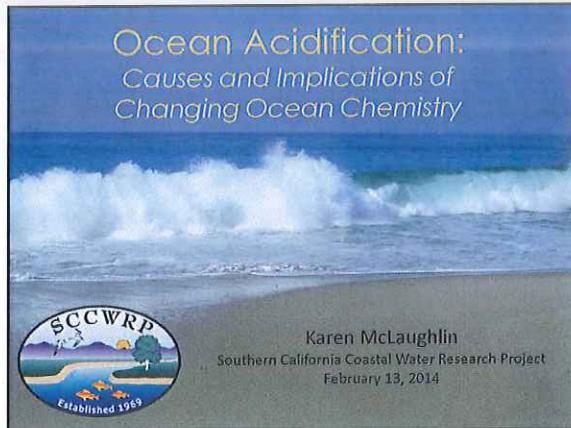
CODE: 1/23/2013 14:01

GT - Gas Tax
 MM - Measure M
 RDF - Road Fund

GT - General Fund
 SF - Sanitation Fund

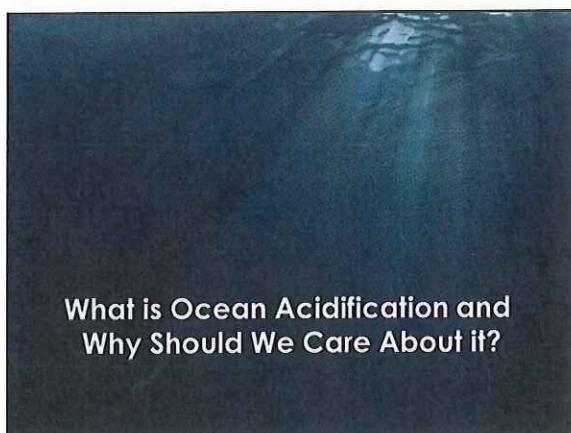
HAULER-Solid Waste Collector

WB - Water Bill



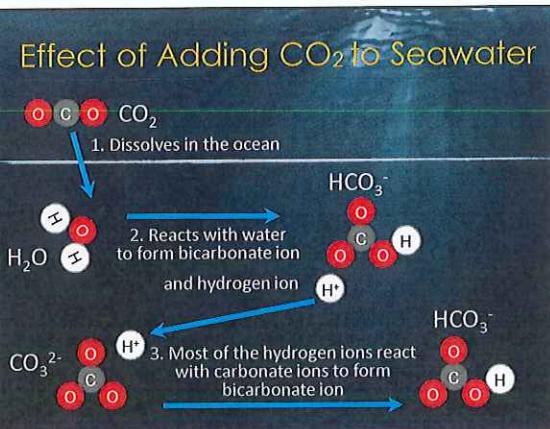
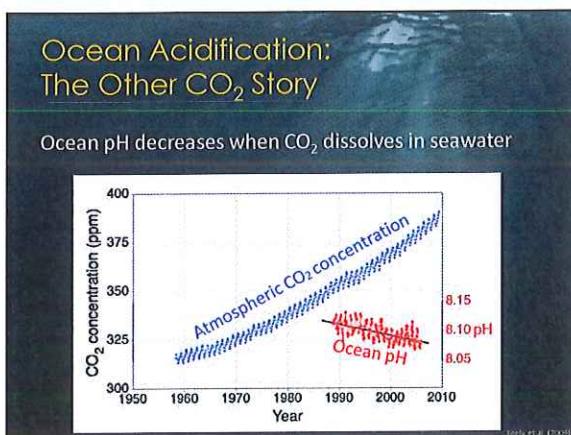
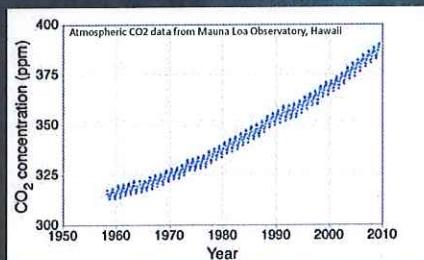
Today's Talk (In Two Acts...)

- What is ocean acidification and why should we care?
- What efforts are underway to address the issue?



The CO₂ Story You've Already Heard...

Atmospheric CO₂ concentrations are rising



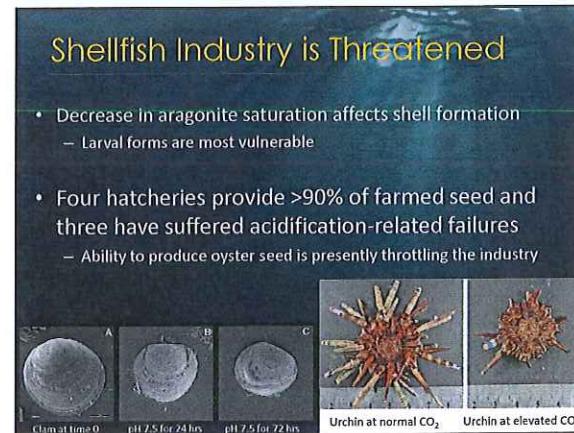
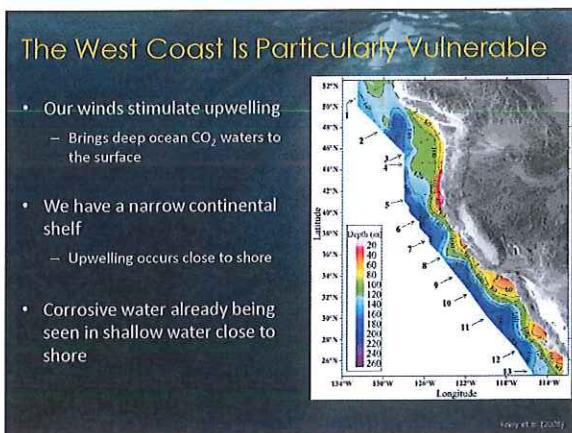
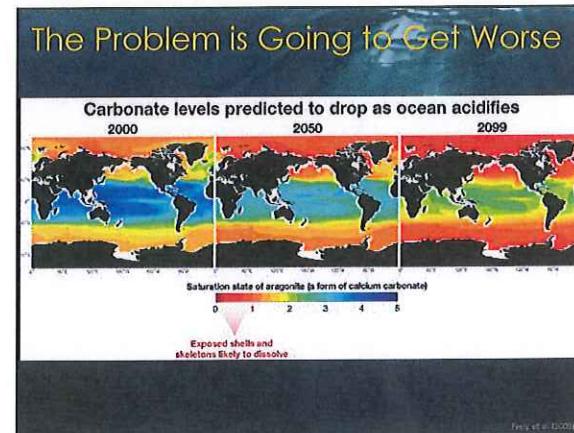
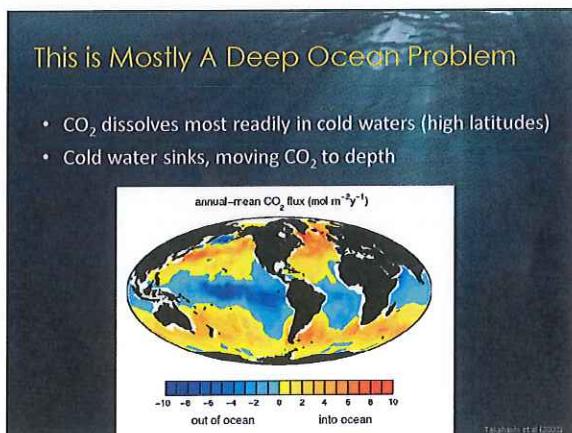
Problem for Shell-Formation

- pH is the measure people know....
- But changes in carbonate chemistry are the real concern
 - Affects shell-forming organisms
- Scientists use aragonite saturation state to quantify this:
 - $\Omega > 1$: Shells form
 - $\Omega < 1$: Difficult to form shells

Source: Day-Lewis et al. (2007) National Geographic Society

Ocean Acidification is Occurring Rapidly

- Approximately 25% of the CO₂ generated by human activities since the mid-1700s has been absorbed by the oceans
- Ocean acidity has increased 30% since the start of the industrial age.
 - Ocean acidity is projected to increase 100-150% percent by 2100.
- Current rate of acidification is nearly 10x faster than any period over the past 50 million years.
 - Organisms may not be able to adapt to rapidly changing conditions



Media Attention

Potential Effects Are Ecosystem Wide

- Changes ocean food webs
- Changes how organisms take in nutrients and metals
- Higher Cost of Living
 - High CO₂ causes physical stress in fish and invertebrates
 - Affects behavior and response
- Loss of habitat
- Some evidence of increased toxin production in HAB species



Clownfish predatory avoidance is diminished under elevated CO₂

Coral Reefs

- Coral reefs are sensitive to both warming and acidification
 - High water temperatures cause coral "bleaching"
 - Acidification makes it harder to build their skeletons
 - Warming and acidification are a one-two punch
- At current CO₂ levels, 60% of coral reefs are in waters with suboptimal aragonite saturation state
 - Could increase to >90% in the next 50 years

Photo: Lester Field/CIO

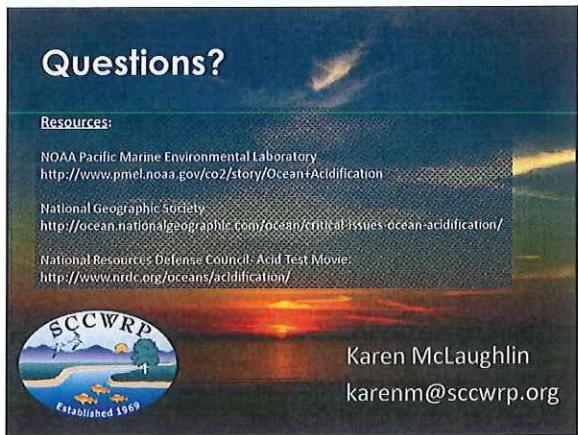
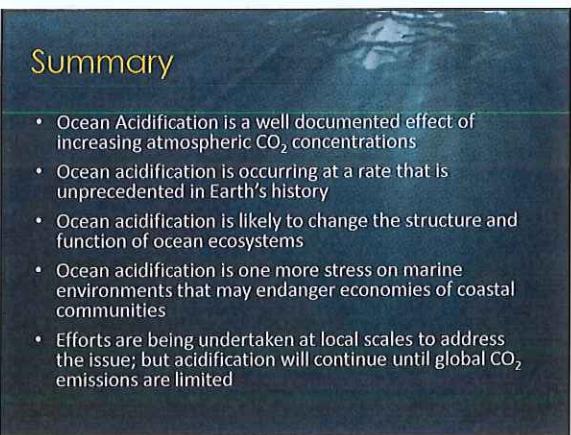
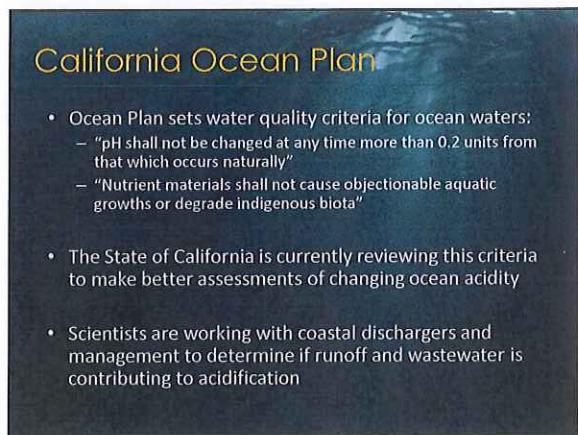
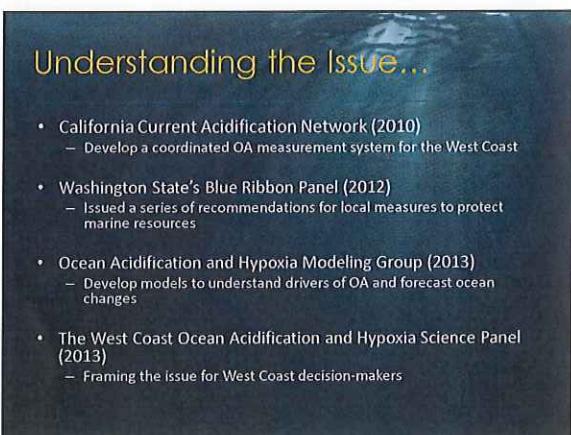
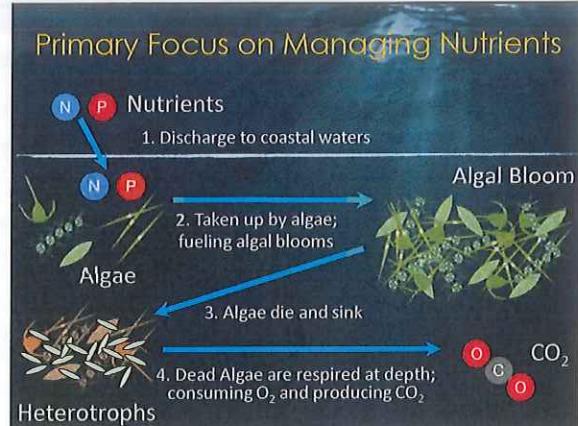
What's Being Done About Ocean Acidification?

How Can We Change the Course of Ocean Acidification?

- The ONLY way to change the course of ocean acidification is to eliminate excess atmospheric CO₂
 - Global regulation of atmospheric carbon emissions
 - Geologic sequestration of atmospheric CO₂
- Federal, Regional, State, and Local actions to understand the problem and manage response
- Local actions could potentially delay the problem in some regions
 - Potentially allowing time for ecosystems to adapt

Federal Actions

- May 2007: Supreme Court Ruled the EPA can regulate greenhouse gasses as pollutants under the Clean Air Act (CAA)
- January 2011: EPA began regulating greenhouse gases under the CAA from mobile and stationary sources of air pollution.
- May 2009: EPA was sued for failing to address ocean acidification under the Clean Water Act (CWA)
 - Nov 2010: EPA issued a memorandum on how states should address OA under the CWA
 - States should list waters not meeting pH water quality standards on their 2012 303(d) lists
 - BUT... Hard to consider listings because we don't have the data to define reference condition



Water Quality / Coastal Tidelands Committee
February 13th, 2014

Orange County Transportation Authority (OCTA)
Environmental Allocation Cleanup Program

Presented by: John Kappeler
Public Works

Program Fact Sheet

Tier 1 Equipment purchases and upgrades to existing catch basins and related BMPs such as screens, filters, inserts and other street scale low-flow diversion projects

Tier 2 construction methods, detection of infiltration basins and levees which include sediment, trash, litter and debris, but also heavy metals, organic chemicals, sediment and nutrients.

Fast Facts

- OCTA Measure M – half cent sales tax for transportation approved by voters in 2006
- \$300M to improve overall water quality in OC from transportation generated pollution
- Grant Program – countywide competitive basis

Tier 1 Program

- \$20M available over a seven year period
- \$200k per grant application (5 applications annually)
- \$500k per agency
- 20-25% matching funds

Eligible Projects

Catch Basin Screens & Filters CDS units Marina Trash Skimmers

Tier 1 Projects - Completed

2 CDS Units Newport Blvd Watershed

Tier 1 Projects - Completed

Clogged stormdrain - pre flush

Manual debris removal

After trash removal

Tier 1 Projects – Completed

Marina Trash Skimmers

● Current Locations ● Future Locations

Tier 1 Projects - Current

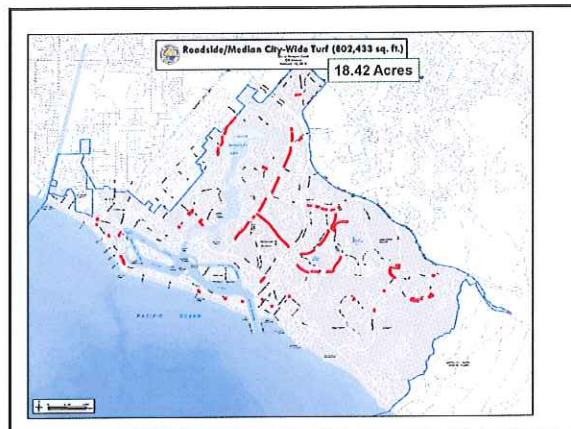
Balboa Coves CDS Unit
Pelican Point CDS Unit
Newport Dunes CDS Unit
Dover Dr. CDS Unit
Marina Trash Skimmers (2 total)

Tier 1 Projects - Future

- \$2.8M available this year
- \$200k per grant application (5 applications annually)
- \$500k per agency
- 20-25% matching funds

Tier 1 Projects - Future

- Irrigation retrofits – street medians
- Additional marina trash skimmers

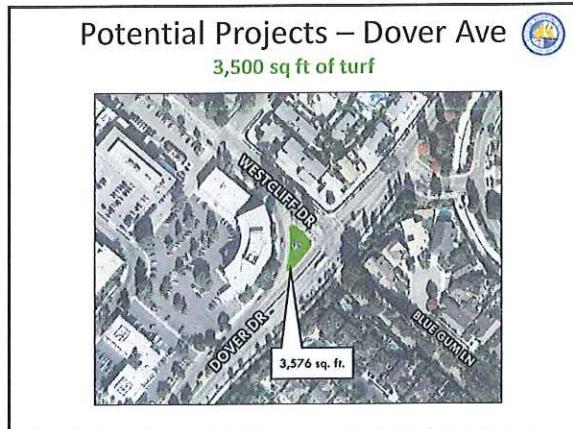
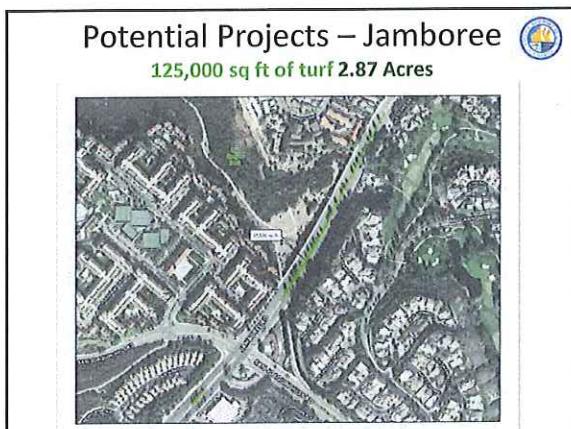


The “Numbers”

- Median turf replacement - \$5-6 sq ft
- 30 gallons of water per sq ft of turf per year
- $802,433 \text{ sq. ft.} * 30 = 24,000,000 \text{ gal. per year}$

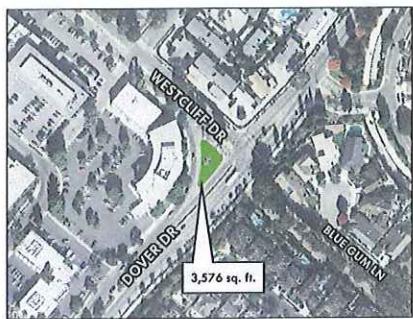
► 24 million gallons = 36 Olympic Pools





Potential Projects – Dover Ave

3,576 sq ft of turf



Questions?

